



Figure 11. 1999 Hyundai Sonata



Figure 12. 1999 Hyundai Sonata



Figure 13. 1999 Hyundai Sonata



Figure 14. 1999 Hyundai Sonata



Figure 15. 1999 Hyundai Sonata

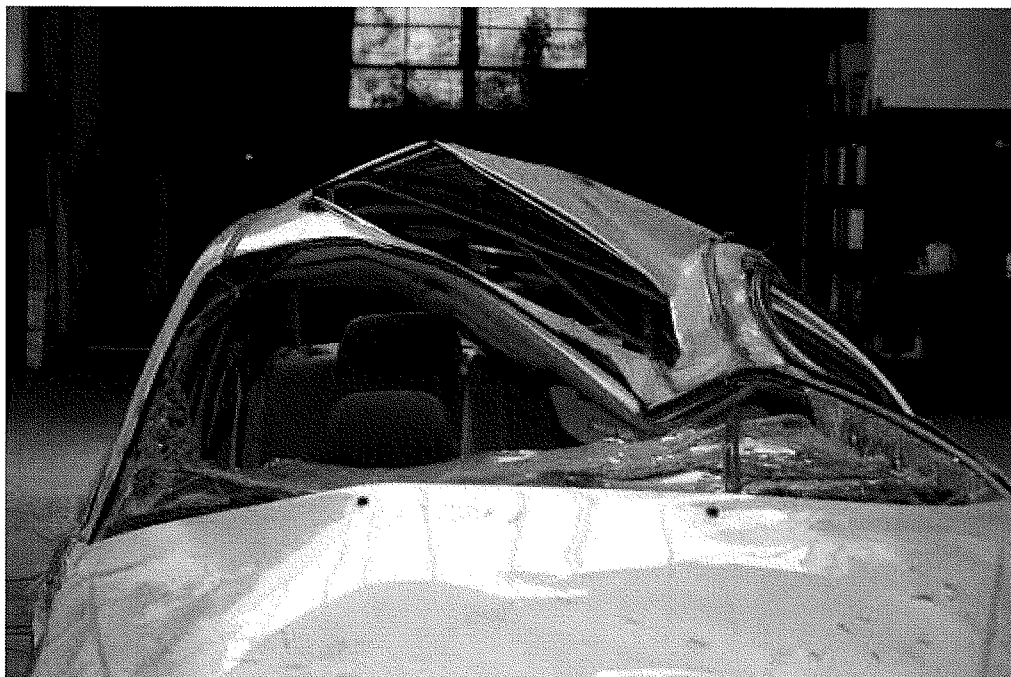


Figure 16. 1999 Hyundai Sonata

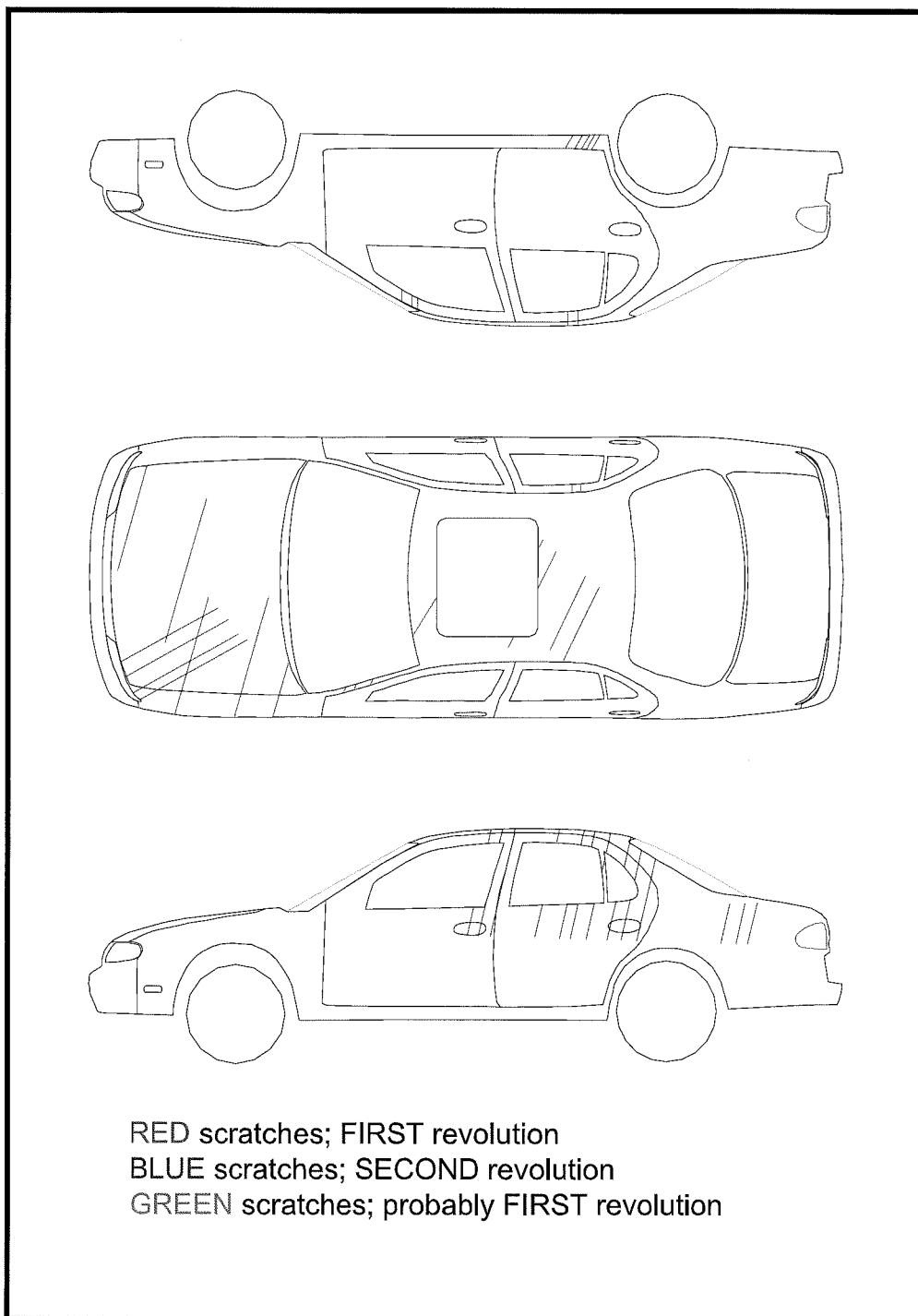


Figure 17. Scratch drawing

Appendix B

Charles Dickerson's Curriculum Vitae

Charles P. Dickerson
Collision Engineering Associates, Inc.
1540 E. University, Suite 500
Mesa, AZ 85203
(480) 655-0399 telephone
(480) 655-0693 facsimile

CONSULTING ENGINEER

Provide engineering analysis in the area of land vehicle performance and safety: crash investigation, crash reconstruction, vehicle handling and dynamics, occupant dynamics and kinematics, restraint system performance evaluation, restraint system usage determination, vehicle and component testing.

Provide trial and deposition testimony.

EXPERIENCE

April 1991 - December 1996
Consulting Engineer
Arndt & Associates, Ltd., Tempe, Arizona

Provided engineering analysis in the general area of land vehicle performance and safety. This included investigation of vehicles and crash scenes, crash reconstruction, crashworthiness analysis, vehicle testing, occupant dynamics and kinematic analysis, restraint system evaluation for performance and usage, fuel containment system and postcrash fire investigations and analysis, provided trial and deposition testimony.

June 1988 - April 1991
Research and Development Engineer
Motorola Inc., Government Electronics Group, Scottsdale, Arizona

Worked on Internal Research and Development programs. Technologies on these programs related to radio frequency and infra-red target detecting devices (Fuzes). Primary responsibilities included high resolution radar analysis, monopulse seeker simulation, phase locked loop design and analysis, and infrared lazer application research. Design and management of field tests was included in job responsibilities.

February 1988 - June 1988
Consultant

Worked as a consultant to Arndt and Associates, Ltd. designing and implementing automobile tests and writing computer routines to perform data analysis.

January 1987 - January 1988

Graduate Research Assistant
Colorado State University, Ft. Collins, Colorado

Was funded through a National Science Foundation grant to study electron transport in InP inversion layers. Part of this project was to assemble a computer controlled data acquisition system for measuring minute electrical signals in solid state devices and to work with NCR (Ft. Collins) and Ford Microelectronics (Colorado Springs) in the packaging of InP and GaAs test structures.

December 1985 - January 1987

Technician
Specialized Mechanical Services, Scottsdale, Arizona

Worked with composite aircraft structures.

September 1982 - December 1985

Shop Foreman
Arndt and Associates, Ltd., Tempe, Arizona

Managed the engineering shop. Duties included supervising workers and internal strategic planning for projects. Also responsible for design and implementation of automobile tests. Test experience included full scale crush facility fabrication, drop tower fabrication, and fabrication of numerous component level tests. Specific experience included involvement in design and fabrication of roof crush, dynamic drop, and transmission characterization tests.

EDUCATION

B.S. in Electrical Engineering, Arizona State University, December 1986, Magna Cum Laude

Post Graduate Work, Colorado State University, 1987-1988

Post Graduate Work, Arizona State University, 2001 to present

CONTINUING EDUCATION

Engineering Training Program, Motorola Government Electronics Group, June 1988 - December 1988

Product Liability and the Engineer, Professional Development Program, Society of Automotive Engineers, February, 1992

Automotive Vehicle Dynamics, Professional Development Program, Society of Automotive Engineers, April, 1992

Vehicle Rollovers TOPTEC, Professional Development Program, Society of Automotive Engineers, September, 1992

Bob Bondurant's School of High Performance Driving, February, 1993

A Practical Hand-on Introduction of Suspension Analysis, Professional Development Program, Society of Automotive Engineers, May 1993

Vehicle Rollovers TOPTEC, An Update of Current Issues, Professional Development Program, Society of Automotive Engineers, August, 1993

Biomechanics of Impact Trauma, Association for the Advancement of Automotive Medicine, October, 1994

Sensor Design for Automobile Airbag Systems, Professional Development Program, Society of Automotive Engineers, January, 1995

Short Course on the Application of DYNAMAN, sponsored by General Engineering and Systems Analysis Company, Inc. (GESAC), January, 1995

Airbag Design and Performance TOPTEC, Professional Development Program, Society of Automotive Engineers, August, 1997

Automotive Safety TOPTEC: Focus On The Child, Professional Development Program, Society of Automotive Engineers, October, 1998

Passenger Car Rollover TOPTEC: Cause and Prevention, Professional Development Program, Society of Automotive Engineers, January, 1999

Theoretical and Applied Vehicle Dynamics, Engineering Dynamics Corporation, January, 2001

SATAI Spring Conference, 2003

Institute of Police Technology and Management, CDR Tool - User Certification Course, 2004

SATAI Spring Conference, 2005

PUBLICATIONS

"Effects of Outrigger Design on Vehicle Dynamics.", SAE Paper No. 940226. Presented at the Society of Automotive Engineers, Inc., 1994 International Congress and Exposition, Detroit, Michigan, February, 1994

"Error Analysis of Center-Of-Gravity Measurement Techniques." SAE Paper No. 950027. Presented at the Society of Automotive Engineers, Inc., 1995 International Congress and Exposition, Detroit, Michigan, February, 1995

"Evaluation of Vehicle Velocity Predictions Using the Critical Speed Formula." SAE Paper No. 950137. Presented at the Society of Automotive Engineers, Inc., 1995 International Congress and Exposition, Detroit Michigan, February, 1995

"Motor Vehicle Mass Property Envelopes." SAE Paper No. 950165, February, 1995.

"Effects of Passenger and Cargo Loading on a Motor Vehicle's Mass Properties." *39th Annual Proceedings Association for the Advancement of Automotive Medicine*, Chicago, Illinois, October, 1995.

"Evaluation of Experimental Restraints in Rollover Conditions." SAE Paper No. 952712. Presented to the 39th Stapp Car Crash Conference, San Diego, California, November, 1995

"Effects of Passenger and Cargo Loading on a Motor Vehicle's Mass Properties." SAE Paper No. 952676. Presented at the Society of Automotive Engineers, Inc., Winston-Salem, North Carolina, November 1995.

"Documenting Scientific Visualizations and Computer Animations Used in Collision Reconstruction Presentations." SAE Paper No. 980018. Presented at the Society of Automotive Engineers, Inc., 1998 International Congress and Exhibition, Detroit Michigan, February, 1998

"Low Speed Acceleration of Heavy Trucks." SAE Paper No. 980366. Presented at the Society of Automotive Engineers, Inc., 1998 International Congress and Exhibition, Detroit Michigan, February, 1998

"Vehicle Handling with Tire Tread Separation." SAE Paper No. 1999-010-0120, Presented at the Society of Automotive Engineers, Inc., 1999 International Congress and Exhibition, Detroit Michigan, March, 1999

"The Effects of Passenger and Cargo Load on Limit Handling Performance of a Mini-Van." SAE Paper No. 1999-01-0450, Presented at the Society of Automotive Engineers, Inc., 1999 International Congress and Exhibition, Detroit, Michigan, March, 1999

"Low Speed Acceleration of the Freightliner FLD-120 Tractor Truck." SAE 1999-01-0095

"Simulation of a Pedestrian/Automobile Crash." American Academy of Forensic Sciences, 52nd Annual Meeting Conference Proceedings - Abstract

"Properties of Passenger Car Tires with Tread Detachment." SAE Paper No. 2000-01-0697

"Low-Speed Acceleration of a Kenworth T2000 Tractor-Truck with Autoshift Transmission." SAE Paper No. 2000-01-0470

Paper Reviewer for the Society of Automotive Engineers, Inc., Accident Reconstruction Group, 1996 to present

INVITED LECTURES

"Rollover Accident Reconstruction." presented at the Attorney's Information Exchange Group, Auto Focus, 1992 and 1993

"Accident Reconstruction Issues." presented at Lewis and Roca Forum, Critical Claims Issues for the 1990's.

Car Crashes and Occupant Injuries, Faculty Member, Association for the Advancement of Automotive Medicine, April 24-25, 1997, April 18 - 17, 1998, April 29 - 30, 1999, April 13 - 14, 2000

“Accident Reconstruction: Simulation vs. Animation”, Nevada Trial Lawyers Association, 1 CLE credit, August 20, 1997

“Accident Reconstruction and the Seat Belt Defense”, Teilborg, Sanders and Parks, P.C., 1 CLE credit, November 20, 1997

AFFILIATIONS

Society of Automotive Engineers, Inc.

National Association of Professional Accident Reconstruction Specialists, Inc.

Southwest Association of Technical Accident Investigators

Fee Schedule

Charles P. Dickerson

Travel	170 \$/hr
Engineering	170 \$/hr
Testimony	170 \$/hr

Miscellaneous

Secretarial	40 \$/hr
Engineering Tech.	55 \$/hr
Assoc. Analyst	130 \$/hr

Time and expenses billed.

All expenses passed through to client without markup.